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EXAMINER	
HIGA, BRENDAN Y	

ART UNIT	PAPER NUMBER
2441	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/748,769	EWANCHUK ET AL.	
	Examiner	Art Unit	
	Brendan Higa	2441	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-11 and 18-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-11 and 18-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office action is in response to Applicant's amendment and request for reconsideration filed on August 11, 2010.

Claims 7-11 and 18-24 are pending.

Response to Arguments

Claim Rejections under 35 U.S.C. §101

Applicant's concern over the "non-transitory" language is noted. Furthermore, the examiner is aware that in some cases the use of "storage" had previously been used to overcome 35 U.S.C. 101 computer readable medium (CRM) rejections. However, the current position of the U.S. Patent Office concerning claims directed to any CRM requires the use of the "non-transitory" language, even for claims directed to a "computer readable *storage* medium" when the Applicant has not otherwise provided a limiting definition for a computer-readable storage medium in the specification (see http://www.uspto.gov/patents/law/notices/101_crm_20100127.pdf). Also see *Ex parte Kelkar*, App. No. 2009–004635 (BPAI, September 24, 2010) (*"Giving the claims their broadest reasonable interpretation, we find no error in the Examiner's conclusion that "the program products* stored on a recordable medium read on carrier wave storage*")*.

If the Applicant is concerned with the "non-transitory" language, the examiner would suggest amending the claim to read on a device as opposed to a CRM, such as a "computer-readable storage ~~medium~~ device" which does not trigger 35 U.S.C. §101 issues (The examiner is of course assuming that the specification has not otherwise

redefined the term "device" from its ordinary meaning in the specification, which based on the examiner's cursory review of the specification does not appear to be an issue).

Claim Rejections under 35 U.S.C. §103

Applicant's arguments with respect to claims 7, 8, 9, 19, and 18-24 have been considered but are moot in view of the new ground(s) of rejection.

As noted in the detailed action below the examiner introduces Wiggins (US 5,717,604) and alternatively Desrochers (WO 01/76175)("Desrochers") for teaching the newly added claim amendments.

Applicant's arguments with respect to claims 21 and 24 have been fully considered but they are not persuasive.

Applicant's argument that Gase's "first application" is not a centralized connection manager the examiner respectfully disagrees. From the perspective of the secondary applications the first application acts as a centralized connection manager by registering the secondary applications to use a shared port in response to a connection request from said secondary applications (see abstract and col. 5, liens 52-60); deregistering secondary applications from a shared port (see col. 5, liens 52-60) and managing the flow of incoming packets to each of the secondary applications correlated in the distribution list (see col. 6, lines 35-46).

Be that as it may, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re*

Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Here, the examiner explicitly cited Wilson for teaching the centralized connection manager (see Fig. 1 and 3 ref. 28).

Furthermore, in all likelihood Wilson probably maintains a record in "a data structure of which applications are using the shared connection, the data structure further comprising data elements corresponding to connection requests that have been added to the data structure in response to connection methods", since that would seem to be the most logical method for the centralized connection manager in Wilson to manage the registration of client applications (see Fig. 2 ref. 18) that connect to, and disconnect from, the shared connection (see Wilson ¶0022-¶0023 and ¶0028-0029).

Nevertheless, the examiner's understands that with an inherency argument the inherent feature MUST be included in the reference. Furthermore, since Wilson does not expressly teach the existence of such a database, and the examiner is unwilling to say with 100% certainty that Wilson could not have otherwise operated WITHOUT such a database, the examiner gives the Applicant the benefit of the doubt that such a database is not inherent in the teachings of Wilson. Thus, the examiner introduces Gase for teaching a data structure comprising data elements corresponding to connection requests (see Gase's "distribution list" col. 3, lines 38-45).

Furthermore, whether or not Gase's primary application is or is not a centralized connection manager as argued by the Applicant seems to be missing the point. As noted, by the Supreme Court in KSR v. Teleflex 550 U.S. 398 (2007):

> When a work is available in one field, design incentives and other market forces can prompt variations of it, either in the same field or in another. If a

> person of ordinary skill in the art can implement a predictable variation, and would see the benefit of doing so, § 103 likely bars its patentability. Moreover, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond that person's skill. *Id.* at 402.

Here, assuming *arguendo* that Gase's distribution list (see col. 3, lines 38-45), is being used by something other than a centralized connection manager (and therefore is arguably being used in a different field of invention) it still does not defeat the obviousness of modifying Wilson's centralized connection manager to use a similar database to manage connections within the context of a centralized connection manager. The obvious motivation for doing so would have to take advantage of the simplicity and organizational efficiency inherent to a data structure of client connection identifiers.

Furthermore, the examiner is aware that a 103(a) obviousness rejection can be overcome by a showing of an unexpected result *KSR* at 410 and/or a showing that the combination would have been beyond the skill of one of ordinary skill in the art *KSR* at 402.

However, here, the Applicant has not argued (nor does it seem that the Applicant could argue in good faith) that modifying Wilson to use a simple database would have somehow lead to an unexpected result and/or would have been beyond the level of ordinary skill in the computing art to defeat the examiner's obviousness rationale.

Claim Objections

As per claim 18 the Applicant introduces "a first process" in line 3 and reintroduces "a first process" in line 10. As best understood the limitation in line 10 is a typographical error and should be "an identifier of [[a]] the first process", thus eliminating any confusion of having two 'first processes' in Applicant's claim.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 18-20 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As per claims 18-20, the broadest reasonable interpretation of a claim drawn to a computer readable medium (i.e. computer readable storage medium) typically covers forms of non-transitory tangible media and transitory propagating signals per se (see http://www.uspto.gov/patents/law/notices/101_crm_20100127.pdf). However, when the broadest reasonable interpretation of a claim covers a signal per se, the claim must be rejected under 35 U.S.C. §101 as covering non-statutory subject matter. *See* In *re Nuijten,* 500 F.3d 1346, 1356-57 (Fed. Cir. 2007).

Here, Applicant's specification does not provide an express definition for a computer-readable storage medium. Thus, since the broadest reasonable interpretation of claims 18-20 may cover transitory propagating signals *per se*, the claims must be rejected under 35 U.S.C. §101 as covering non-statutory subject matter.

In order to overcome the 35 U.S.C. §101 rejection of claims 18-20 the examiner would encourage the applicant to limit the scope of claims 18-20 to "a non-transitory computer readable storage medium".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 7, 8, 9 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (US 2002/0087698) in view of Gase (US 6,363,081) ("Gase"), in further view of Wiggins (US 5,717,604)("Wiggins").

As per claim 7, Wilson teaches a computerized method comprising:

receiving, form a first application on a client computer (see ¶0016 - ¶0017, clients 18 running on "processor-based system", read as first application on a client computer), a first request (i.e. a request to register with the connection manager, see ¶0023), at a connection manager (see Fig. 3, ref. 28 and ¶0023), for connection to a remote resource (see "Internet", Fig. 1, ref. 14);

upon receiving the first request for connection, creating the connection between the first application and the remote resource when a physical hardware connection (i.e. dial-up connection) between the computer and the remote resource is not already established (see ¶0028);

receiving, at the connection manager, a second request from a second application for connection to the same remote resource as the first application (see ¶0022-¶0023), the first application, the second application and the connection manager all being located on the same client computer (see Fig. 1, ref. 18c, 18b, and 28, respectively).

sharing the connection to the remote resource between the first and the second application (see abstract "multiple clients use the same connection"), wherein sharing the connection includes having the first and second applications using the same physical hardware connection to the remote resource (see ¶0003, ¶0028, and ¶0036, wherein the first and second applications are using the same dial-up connection to the internet);

receiving a request for a disconnection from either the first or second application for disconnection from a remote resource (i.e. a request to terminate the connection, see ¶0003, ¶0028-¶0029, and ¶0036);

Furthermore, Wilson teaches disconnecting the physical hardware connection upon detecting that all clients have disconnected from the connection (see ¶0025) and maintaining the connection when a client is still registered (see Fig. 3, and ¶0003, ¶0028-¶0029, and ¶0036, wherein the connection is maintained as long as one client is still connected).

However, Wilson does not expressly teach saving in a data structure maintained by the connection manager, a first connection request, an identifier of the first application from which the first request for a connection was received; saving in the data structure, a second connection request data element comprising: an identifier of the second application for which the second request for a connection was received; and, upon a client requesting disconnection from the physical hardware connection, deleting from the data structure, the connection request data element corresponding to the application from which the request for the disconnection was received, whereby the physical hardware connection is disconnected when the deleted connection request data element is the last connection request data element in the data structure, and when the deleted connection request data element is not the last connection request data element.

Nevertheless, in the same art of computer-to-computer session/connection establishing, Gase teaches a system for sharing a connection between multiple processes (i.e. secondary/primary applications) (see abstract). Furthermore, Gase teaches that the system maintains a distribution list of registered processes that are sharing the connection (see col. 3, lines 38-45, read as a data structure of data

elements corresponding to application connection requests comprising: an identifier of the application for which the request for a connection was received). Thus, upon a process registering with the shared connection, identification information associated with the registered process is added to the data structure (see col. 5, lines 52-62). Furthermore, upon a connected process disconnecting from the shared connection, a drop registration message is delivered by the process to remove the registration information from the data structure (see col. 5, lines 52-62).

A person having ordinary skill in the art would have been motivated to modify the teachings of Wilson with the teachings of Gase for modifying the connection manager (i.e. Wilson, Fig. 1, ref. 28) to utilize a data structure of client connection identifiers to determine whether all clients have disconnected from the connection before disconnecting the physical hardware connection (i.e. Wilson ¶0025). The motivation for doing so would have been to take advantage of the simplicity and organizational efficiency inherent to a data structure of client connection identifiers.

As per claim 7, Wilson in view of Gase does not expressly teach wherein the stored data element for the first connection request includes a value representing a time of the first and second request;

determining that a threshold period of time has elapsed for at least one of the connection request data elements based on the corresponding value representing the time of the request; and

checking whether the application associated with the at least one connection request data elements is still running after the threshold period of time has elapsed.

Nevertheless in the same art of application monitoring, Wiggins teaches:

storing a value representing a time of a connection to a server by first and second applications operating in a multi-task environment (see "date and time", col. 13, lines 30-42);

determining that a threshold period of time has elapsed for at least one of the connection request data elements based on the corresponding value representing the time of the request (i.e. predetermined period set by a chktime variable, see col. 5, lines 47-66); and

checking whether the application associated with the at least one connection request data elements is still running after the threshold period of time has elapsed (i.e. whether the application is idle, see col. 5, lines 47-col. 6, line 12).

A person having ordinary skill in the art would have been motivated to modify the teachings of Wilson and Gase with the teachings of Wiggins for monitoring for idle applications. The motivation for doing so would have been to free up computer resources that are tied to inactive client applications in Wilson's invention.

As per claim 8, the combination of Wilson, Gase and Wiggins teaches deleting from the data structure, at least one of the connection request data elements after the corresponding period of time has elapsed if a process associated with the identifier in the corresponding request data element has terminated (see Gase col. 5, lines 52-67, i.e. removing the identifier of the second application from the distribution list in response to a command seeking to de-register the second application, read as a terminated process).

The same motivation that was utilized for combining Wilson, Gase and Wiggins claim 7 applies equally well to claim 8.

As per claim 9, Wilson further teaches wherein the remote resource comprises a web server (see abstract, wherein the connection is to the Internet, which impliedly comprises a web server).

As per claim 18, Wilson teaches a computer-readable medium comprising executable instructions for performing a method comprising:

creating a physical hardware connection in response to a request from a first process to communicate with a remote resource (see ¶0028), the process being located on a client computer (see ¶0016 - ¶0017, clients 18 running on "processor-based system", read as a process being located on a client computer);

using a connection manager, registering multiple other processes requesting communicating with remote resources via the connection (see ¶0020-¶0023) the first process sharing the physical hardware connection with the multiple other processes (see ¶0020-¶0023), the multiple other processes and the connection manager are located on the same computer (see Fig. 1, ref. 18c, 18b, and 28, respectively);

using the connection manager, removing one of the processes when the process requests a disconnection (see ¶0020, "no clients have (or remain) registered with the connection manager", also see ¶0029 "when all the clients 18 have disconnected", which the examiner is interpreting as the processes being removed when the process requests a disconnection)

maintaining the connection when a process requests a disconnection when the connection manager indicates another process is communicating with remote resources via the connection (see Fig. 3, and ¶0003, ¶0028-¶0029, and ¶0036, wherein the connection is maintained as long as one client is still connected); and

disconnecting the physical hardware connection when a process requests a disconnection when the connection manager indicates that no other process is communicating with remote resources via the connection (see ¶0025).

Wilson does not expressly teach the connection manager storing in a data structure identifiers of multiple other processes requesting to communicate with remote resources via the connection, removing an identifier of one of the processes from the stored identifiers when the process requests a disconnection, wherein the physical hardware connection is maintained when the stored identifiers indicate that another process is communicating with remote resources via the connection and disconnecting the physical hardware connection when stored identifiers indicate no other process is communicating with remote resources via the connection.

Nevertheless, in the same art of computer-to-computer session/connection establishing, Gase teaches a system for sharing a connection between multiple processes (i.e. secondary/primary applications) (see abstract). Furthermore, Gase teaches that the system maintains identifiers of registered processes that are sharing the connection (see col. 3, lines 38-45). Thus, upon a process registering with the shared connection, identification information associated with the registered process is added to the data structure (see col. 5, lines 52-62). Furthermore, upon a connected process disconnecting from the shared connection, a drop registration message is delivered by the process to remove the identification information of the disconnecting process (see col. 5, lines 52-62).

A person having ordinary skill in the art would have been motivated to modify the teachings of Wilson with the teachings of Gase for modifying the connection manager (i.e. Wilson, Fig. 1, ref. 28) to utilize stored client connection identifiers to determine whether all clients have disconnected from the connection before disconnecting the

physical hardware connection (i.e. Wilson ¶0025). The motivation for doing so would have been to take advantage of the simplicity and organizational efficiency inherent to a data structure of client connection identifiers associated with existing client connection. Such a modification would have reduced the complexity in using alternative methods for determining whether all clients have disconnected from the connection before disconnecting the physical hardware connection.

As per claim 18, Wilson in view of Gase does not expressly teach storing in the data structure time values corresponding to requests made by the multiple other processes;

determining that a threshold period of time has elapsed for at least one of the connection request data elements based on the corresponding value representing the time of the request; and

checking whether the application associated with the at least one connection request data elements is still running after the threshold period of time has elapsed.

Nevertheless in the same art of application monitoring, Wiggins teaches:

storing a value representing a time of a connection to a server by first and second applications operating in a multi-task environment (see "date and time", col. 13, lines 30-42);

determining that a threshold period of time has elapsed for at least one of the connection request data elements based on the corresponding value representing the time of the request (i.e. predetermined period set by a chktime variable, see col. 5, lines 47-66); and

checking whether the application associated with the at least one connection request data elements is still running after the threshold period of time has elapsed (i.e. whether the application is idle, see col. 5, lines 47-col. 6, line 12).

A person having ordinary skill in the art would have been motivated to modify the teachings of Wilson and Gase with the teachings of Wiggins for monitoring for idle applications. The motivation for doing so would have been to free up computer resources that are tied to inactive client applications in Wilson's invention.

Finally, as per claim 18, the combination of Wilson, Gase, and Wiggins teaches removing an identifier of the second process from the stored identifiers based on the checking (see Wiggins, col. 6, lines 1-12, wherein the application is closed in response to the checking, also see Gase col. 5, lines 52-62, where in response to the closing of a process a drop registration message is delivered by the process to remove the identification information from the stored identifiers).

As per claim 19, the combination of Wilson, Gase, and Wiggins further teaches the computer readable medium of claim 18 further comprising executable instructions for removing an identifier of a process from the stored identifiers when the process has terminated (see Gase col. 5, lines 52-62).

As per claim 20, the combination of Wilson, Gase, and Wiggins further teaches periodically removing identifiers of processes from the stored identifiers (see Gase col. 5, lines 52-67) when the processes have terminated without requesting a disconnect (see Wiggins, col. 6, lines 1-12, read as closing without requesting a disconnect), wherein the periodically removing is based at least in part on the time values (see Wiggins col. 5, lines 47-col. 6, line 12, "Timer 1" and "Timer 2", also see "date and time", Wiggins, col. 13, lines 31-42).

The same motivation that was utilized for combining Wilson, Gase and Wiggins in claim 18 applies equally well to claim 20.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (US 2002/0087698) in view of Gase (US 6,363,081) ("Gase"), in view of Wiggins (US 5,717,604)("Wiggins"), in view of Stone (US 5,802,304)("Stone"), in further view of Boss et al. (US 6,157,618) ("Boss").

As per claim 10, Wilson further teaches wherein the connection is a dial-up connection between a modem and an Internet service provider (see Fig. 8, ref. 16a, and ¶0015).

However, Wilson does not expressly teach wherein creating the connection comprises obtaining connection information from a system registry on the client computer and using the connection information comprises a connection method and connection rules, wherein the connection method is dial-up, wherein the connection information obtained from the system registry comprises an indicator of a custom dialer implemented as a DLL to be used in establishing the connection, wherein the connection rules comprise telephone number dialing rules.

Nevertheless, in the same art of dial-up connection establishing, Stone teaches a system for creating a dial-up connection by obtaining connection information from a system registry on the client computer (i.e. Windows system registry, see col. 14, lines 8-22) and using the connection information comprises a connection method (i.e. dial-up) and connection rules (i.e. "handler function", read as function that defines connection rules for establishing a dial-up connection using Windows APIs, see col. 13, line 64-col. 14, line 22), wherein the connection information obtained from the system registry comprises an indicator of a custom dialer implemented as a DLL to be used in establishing the connection (i.e. <DLL file name>, see col. 14, lines 8-22).

A person having ordinary skill in the art would have been motivated to modify the teachings of Wilson with the teachings of Stone by implementing the dial-up connection according to Stone's automatic dialer. The motivation for doing so would have been to reduce human error in establishing a dial-up connection.

Stone, however, is silent on the automatic dialer including connection rules comprising telephone number dialing rules.

Nevertheless, telephone number dialing rules for establishing a dial-up connection were well known in the art, at the time of the invention. For example, Boss teaches a system for establishing a dial-up connection using a list of ISP dial-up numbers (see col. 4, lines 42-54). Thus, if a client is unable to establish a dial-up connection to an ISP using a first dial-up telephone number, the system moves on to attempt to establish a dial-up connection to the ISP using a second dial-up telephone number (see col. 4, lines 42-54) (read as telephone number dialing rules).

A person having ordinary skill in the art would have been motivated to modify the teachings of Wilson and Stone with the teachings of Boss. The motivation for doing so would have to allow Wilson's client (i.e. Fig. 1, ref. 18b and 18c) to establish a connection with an ISP using a back-up telephone number.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (US 2002/0087698) in view of Gase (US 6,363,081) ("Gase"), in view of Wiggins (US 5,717,604)("Wiggins"), in further view of Morris et al. (US 7,069,333)("Morris").

As per claim 11, Wilson further teaches the method having plural application sending the connection request and communicating with remote resources over the connection (see ¶0022-¶0023).

However, the combination of Wilson, Gase, and Wiggins does not describe the device as being a wireless device.

Nevertheless, in the same art of computer network session/connection establishing Morris teaches a wireless device using a Winsock based communication network for establishing an internet connection (see col. 22, line 64 - col. 23, line 8).

A person of ordinary skill in the art would have been motivated to modify the teachings of Wilson, Gase, and Welch with the teachings of Morris for using a wireless device. The motivation for doing so would have been to take advantage of the mobility associated with a wireless device.

Claims 21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (US 2002/0087698) in view of Gase (US 6,363,081) ("Gase").

As per claim 21, Wilson teaches a method of connecting plural applications to a remote resource, comprising:

receiving a first request from a first application, located on a client computer, to connect to a remote resource (see ¶0028 and Fig. 1, ref. 14, wherein the examiner is interpreting the remote resource as the Internet);

establishing a physical hardware connection between the first application and the remote resource (see ¶0028);

receiving a second request from a second application located on the same client computer as the first application to connect to the same remote resource (see ¶0023);

using the same established physical hardware connection for the second application so that the first application and second application share the physical hardware connection to the remote resource (see ¶0023, "using the existing connection");

using a centralized connection manager, maintaining a record of which applications are using the shared connection (see ¶0020 and ¶0025, wherein the connection manager 28, impliedly maintains some record of which applications are using the shared connection so that it can determine whether all clients 18 have disconnected from the connection 12 in ¶0025);

determining whether any data elements corresponding to connection requests remain in the record; and based on the determining, maintaining the connection while at least one of the data elements corresponding to connection requests remain in the data structure and otherwise disconnecting the physical hardware connection (see ¶0025 and ¶0029, wherein impliedly the system must check some record of data elements corresponding to connection requests to determine whether all clients 18 have disconnected from the connection 12 or not).

Wilson does not expressly teach maintaining a record in a data structure at the centralized connection manager of which applications are using the shared connection, the data structure comprising data elements corresponding to connection requests that have been added to the data structure in response to connection method calls; in response to a disconnection request from either the first or second application, deleting a data element from the data structure at the centralized connection manager, the data elements corresponding to the application from which the disconnection request was received.

Nevertheless, in the same art of computer-to-computer session/connection establishing, Gase teaches a system for sharing a connection between multiple processes (i.e. secondary/primary applications) (see abstract). Furthermore, Gase teaches that the system maintains a distribution list of registered processes that are sharing the connection (see col. 3, lines 38-45, read as a data structure of data elements corresponding to application connection requests comprising: an identifier of the application for which the request for a connection was received). Thus, upon a process registering with the shared connection, identification information associated with the registered process is added to the data structure (see col. 5, lines 52-62). Furthermore, upon a connected process disconnecting from the shared connection, a drop registration message is delivered by the process to remove the registration information from the data structure (see col. 5, lines 52-62).

A person having ordinary skill in the art would have been motivated to modify the teachings of Wilson with the teachings of Gase for modifying the centralized connection

manager (i.e. Wilson, Fig. 1, ref. 28) to utilize a data structure of client connection identifiers to determine whether all clients have disconnected from the connection before disconnecting the physical hardware connection (i.e. Wilson ¶0025). The motivation for doing so would have been to take advantage of the simplicity and organizational efficiency inherent to a data structure of client connection identifiers.

As per claim 24, Wilson further teaches wherein the connection is a dial-up connection between a modem and an Internet service provider (see Fig. 8, ref. 16a, and ¶0015).

Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (US 2002/0087698), in view of Gase (US 6,363,081) ("Gase"), in further view of Clark (US 6,598,068)("Clark").

As per claim 22, Wilson does not expressly teach wherein the requests are received by an operating system located on the client computer.

Nevertheless, an operating system for managing computing resources that are shared by multiple client applications running on a single machine was well known in the art. For example, Clark teaches that "during execution, processes use resources, such as memory, modems, and printers. To take full advantage of resources, operating systems have been developed which allow multiple processes to share resources" (see col. 1, lines 15-24).

A person having ordinary skill in the art would have been motivated to modify the teachings of Wilson with the teachings of Clark for utilizing an operating system to managing the sharing of a network connection in Wilson's invention. The motivation for doing so would have been to take full advantage of an operating system's ability to efficiently manage a shared network connection.

As per claim 23 Wilson further teaches wherein the requests are receiving by the operating system through an application program interface (see ¶0035).

Claims 7-9 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (US 2002/0087698) in view of Gase (US 6,363,081) ("Gase"), in further view of Desrochers (WO 01/76175)("Desrochers").

As per claim 7, Wilson teaches a computerized method comprising:

receiving, form a first application on a client computer (see ¶0016 - ¶0017, clients 18 running on "processor-based system", read as first application on a client computer), a first request (i.e. a request to register with the connection manager, see ¶0023), at a connection manager (see Fig. 3, ref. 28 and ¶0023), for connection to a remote resource (see "Internet", Fig. 1, ref. 14);

upon receiving the first request for connection, creating the connection between the first application and the remote resource when a physical hardware connection (i.e. dial-up connection) between the computer and the remote resource is not already established (see ¶0028);

receiving, at the connection manager, a second request from a second application for connection to the same remote resource as the first application (see ¶0022-¶0023), the first application, the second application and the connection manager all being located on the same client computer (see Fig. 1, ref. 18c, 18b, and 28, respectively).

sharing the connection to the remote resource between the first and the second application (see abstract "multiple clients use the same connection"), wherein sharing the connection includes having the first and second applications using the same physical hardware connection to the remote resource (see ¶0003, ¶0028, and ¶0036, wherein the first and second applications are using the same dial-up connection to the internet);

receiving a request for a disconnection from either the first or second application for disconnection from a remote resource (i.e. a request to terminate the connection, see ¶0003, ¶0028-¶0029, and ¶0036);

Furthermore, Wilson teaches disconnecting the physical hardware connection upon detecting that all clients have disconnected from the connection (see ¶0025) and maintaining the connection when a client is still registered (see Fig. 3, and ¶0003, ¶0028-¶0029, and ¶0036, wherein the connection is maintained as long as one client is still connected).

However, Wilson does not expressly teach saving in a data structure maintained by the connection manager, a first connection request, an identifier of the first application from which the first request for a connection was received; saving in the data structure, a second connection request data element comprising: an identifier of the second application for which the second request for a connection was received; and, upon a client requesting disconnection from the physical hardware connection, deleting from the data structure, the connection request data element corresponding to the application from which the request for the disconnection was received, whereby the physical hardware connection is disconnected when the deleted connection request data element is the last connection request data element in the data structure, and when the deleted connection request data element is not the last connection request data element.

Nevertheless, in the same art of computer-to-computer session/connection establishing, Gase teaches a system for sharing a connection between multiple processes (i.e. secondary/primary applications) (see abstract). Furthermore, Gase teaches that the system maintains a distribution list of registered processes that are sharing the connection (see col. 3, lines 38-45, read as a data structure of data

elements corresponding to application connection requests comprising: an identifier of the application for which the request for a connection was received). Thus, upon a process registering with the shared connection, identification information associated with the registered process is added to the data structure (see col. 5, lines 52-62). Furthermore, upon a connected process disconnecting from the shared connection, a drop registration message is delivered by the process to remove the registration information from the data structure (see col. 5, lines 52-62).

A person having ordinary skill in the art would have been motivated to modify the teachings of Wilson with the teachings of Gase for modifying the connection manager (i.e. Wilson, Fig. 1, ref. 28) to utilize a data structure of client connection identifiers to determine whether all clients have disconnected from the connection before disconnecting the physical hardware connection (i.e. Wilson ¶0025). The motivation for doing so would have been to take advantage of the simplicity and organizational efficiency inherent to a data structure of client connection identifiers.

As per claim 7, Wilson in view of Gase does not expressly teach wherein the stored data element for the first connection request includes a value representing a time of the first and second request;

determining that a threshold period of time has elapsed for at least one of the connection request data elements based on the corresponding value representing the time of the request; and

checking whether the application associated with the at least one connection request data elements is still running after the threshold period of time has elapsed.

Nevertheless in the same art of application monitoring, Desrochers teaches:

stored data element for the first connection request includes a value representing a time of the first and second request (see "Timer", see page 7, line 13 – page 8, line 12);

determining that a threshold period of time has elapsed for at least one of the connection request data elements based on the corresponding value representing the time of the request (i.e. "whether the Timer has expired", see page 7, line 13 – page 8, line 12); and

checking whether the application associated with the at least one connection request data elements is still running after the threshold period of time has elapsed (i.e. "loops back to test in step 190 whether the application has been closed", see page 7, line 13 – page 8, line 12)

A person having ordinary skill in the art would have been motivated to modify the teachings of Wilson and Gase with the teachings of Desrochers for monitoring for unused applications. The motivation for doing so would have been to free up computer resources that are tied to inactive client applications in Wilson's invention.

As per claim 8, the combination of Wilson, Gase and Desrochers teaches deleting from the data structure, at least one of the connection request data elements after the corresponding period of time has elapsed if a process associated with the identifier in the corresponding request data element has terminated (see Gase col. 5, lines 52-67, i.e. removing the identifier of the second application from the distribution list in response to a command seeking to de-register the second application, read as a terminated process).

The same motivation that was utilized for combining Wilson, Gase and Desrochers claim 7 applies equally well to claim 8.

As per claim 9, Wilson further teaches wherein the remote resource comprises a web server (see abstract, wherein the connection is to the Internet, which impliedly comprises a web server).

As per claim 18, Wilson teaches a computer-readable medium comprising executable instructions for performing a method comprising:

creating a physical hardware connection in response to a request from a first process to communicate with a remote resource (see ¶0028), the process being located on a client computer (see ¶0016 - ¶0017, clients 18 running on "processor-based system", read as a process being located on a client computer);

using a connection manager, registering multiple other processes requesting communicating with remote resources via the connection (see ¶0020-¶0023) the first process sharing the physical hardware connection with the multiple other processes (see ¶0020-¶0023), the multiple other processes and the connection manager are located on the same computer (see Fig. 1, ref. 18c, 18b, and 28, respectively);

using the connection manager, removing one of the processes when the process requests a disconnection (see ¶0020, "no clients have (or remain) registered with the connection manager", also see ¶0029 "when all the clients 18 have disconnected", which the examiner is interpreting as the processes being removed when the process requests a disconnection)

maintaining the connection when a process requests a disconnection when the connection manager indicates another process is communicating with remote resources via the connection (see Fig. 3, and ¶0003, ¶0028-¶0029, and ¶0036, wherein the connection is maintained as long as one client is still connected); and

disconnecting the physical hardware connection when a process requests a disconnection when the connection manager indicates that no other process is communicating with remote resources via the connection (see ¶0025).

Wilson does not expressly teach the connection manager storing in a data structure identifiers of multiple other processes requesting to communicate with remote resources via the connection, removing an identifier of one of the processes from the stored identifiers when the process requests a disconnection, wherein the physical hardware connection is maintained when the stored identifiers indicate that another process is communicating with remote resources via the connection and disconnecting the physical hardware connection when stored identifiers indicate no other process is communicating with remote resources via the connection.

Nevertheless, in the same art of computer-to-computer session/connection establishing, Gase teaches a system for sharing a connection between multiple processes (i.e. secondary/primary applications) (see abstract). Furthermore, Gase teaches that the system maintains identifiers of registered processes that are sharing the connection (see col. 3, lines 38-45). Thus, upon a process registering with the shared connection, identification information associated with the registered process is added to the data structure (see col. 5, lines 52-62). Furthermore, upon a connected process disconnecting from the shared connection, a drop registration message is delivered by the process to remove the identification information of the disconnecting process (see col. 5, lines 52-62).

A person having ordinary skill in the art would have been motivated to modify the teachings of Wilson with the teachings of Gase for modifying the connection manager (i.e. Wilson, Fig. 1, ref. 28) to utilize stored client connection identifiers to determine whether all clients have disconnected from the connection before disconnecting the

physical hardware connection (i.e. Wilson ¶0025). The motivation for doing so would have been to take advantage of the simplicity and organizational efficiency inherent to a data structure of client connection identifiers associated with existing client connection. Such a modification would have reduced the complexity in using alternative methods for determining whether all clients have disconnected from the connection before disconnecting the physical hardware connection.

As per claim 18, Wilson in view of Gase does not expressly teach storing in the data structure time values corresponding to requests made by the multiple other processes;

determining that a threshold period of time has elapsed for at least one of the connection request data elements based on the corresponding value representing the time of the request; and

checking whether the application associated with the at least one connection request data elements is still running after the threshold period of time has elapsed.

Nevertheless in the same art of application monitoring, Desrochers teaches:

stored data element for the first connection request includes a value representing a time of the first and second request (see "Timer", see page 7, line 13 – page 8, line 12);

determining that a threshold period of time has elapsed for at least one of the connection request data elements based on the corresponding value representing the time of the request (i.e. "whether the Timer has expired", see page 7, line 13 – page 8, line 12); and

checking whether the application associated with the at least one connection request data elements is still running after the threshold period of time has elapsed (i.e. "loops back to test in step 190 whether the application has been closed", see page 7, line 13 – page 8, line 12)

A person having ordinary skill in the art would have been motivated to modify the teachings of Wilson and Gase with the teachings of Desrochers for monitoring for unused applications. The motivation for doing so would have been to free up computer resources that are tied to inactive client applications in Wilson's invention.

Finally, as per claim 18, the combination of Wilson, Gase, and Desrochers teaches removing an identifier of the second process from the stored identifiers based on the checking (see Desrochers, page 7, line 13 – page 8, line 12, wherein the application is closed in response to the checking, also see Gase col. 5, lines 52-62, where in response to the closing of a process a drop registration message is delivered by the process to remove the identification information from the stored identifiers).

As per claim 19, the combination of Wilson, Gase, and Desrochers further teaches the computer readable medium of claim 18 further comprising executable instructions for removing an identifier of a process from the stored identifiers when the process has terminated (see Gase col. 5, lines 52-62).

As per claim 20, the combination of Wilson, Gase, and Desrochers further teaches periodically removing identifiers of processes from the stored identifiers (see Gase col. 5, lines 52-67) when the processes have terminated without requesting a disconnect (see Desrochers, page 7, line 13 – page 8, line 12, read as the application being closing without requesting a disconnect), wherein the periodically removing is based at least in part on the time values (i.e. based on the "Timer", see Desrochers page 7, line 13 – page 8, line 12).

The same motivation that was utilized for combining Wilson, Gase and Desrochers in claim 18 applies equally well to claim 20.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (US 2002/0087698) in view of Gase (US 6,363,081) ("Gase"), in view of Desrochers (WO 01/76175)("Desrochers"), in view of Stone (US 5,802,304)("Stone"), in further view of Boss et al. (US 6,157,618) ("Boss").

As per claim 10, Wilson further teaches wherein the connection is a dial-up connection between a modem and an Internet service provider (see Fig. 8, ref. 16a, and ¶0015).

However, Wilson does not expressly teach wherein creating the connection comprises obtaining connection information from a system registry on the client computer and using the connection information comprises a connection method and connection rules, wherein the connection method is dial-up, wherein the connection information obtained from the system registry comprises an indicator of a custom dialer implemented as a DLL to be used in establishing the connection, wherein the connection rules comprise telephone number dialing rules.

Nevertheless, in the same art of dial-up connection establishing, Stone teaches a system for creating a dial-up connection by obtaining connection information from a system registry on the client computer (i.e. Windows system registry, see col. 14, lines 8-22) and using the connection information comprises a connection method (i.e. dial-up) and connection rules (i.e. "handler function", read as function that defines connection rules for establishing a dial-up connection using Windows APIs, see col. 13, line 64-col. 14, line 22), wherein the connection information obtained from the system registry comprises an indicator of a custom dialer implemented as a DLL to be used in establishing the connection (i.e. <DLL file name>, see col. 14, lines 8-22).

A person having ordinary skill in the art would have been motivated to modify the teachings of Wilson with the teachings of Stone by implementing the dial-up connection according to Stone's automatic dialer. The motivation for doing so would have been to reduce human error in establishing a dial-up connection.

Stone, however, is silent on the automatic dialer including connection rules comprising telephone number dialing rules.

Nevertheless, telephone number dialing rules for establishing a dial-up connection were well known in the art, at the time of the invention. For example, Boss teaches a system for establishing a dial-up connection using a list of ISP dial-up numbers (see col. 4, lines 42-54). Thus, if a client is unable to establish a dial-up connection to an ISP using a first dial-up telephone number, the system moves on to attempt to establish a dial-up connection to the ISP using a second dial-up telephone number (see col. 4, lines 42-54) (read as telephone number dialing rules).

A person having ordinary skill in the art would have been motivated to modify the teachings of Wilson and Stone with the teachings of Boss. The motivation for doing so would have to allow Wilson's client (i.e. Fig. 1, ref. 18b and 18c) to establish a connection with an ISP using a back-up telephone number.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wilson (US 2002/0087698) in view of Gase (US 6,363,081) ("Gase"), in view of Desrochers (WO 01/76175)("Desrochers"), in further view of Morris et al. (US 7,069,333)("Morris").

As per claim 11, Wilson further teaches the method having plural application sending the connection request and communicating with remote resources over the connection (see ¶0022-¶0023).

However, the combination of Wilson, Gase, and Desrochers does not describe the device as being a wireless device.

Nevertheless, in the same art of computer network session/connection establishing Morris teaches a wireless device using a Winsock based communication network for establishing an internet connection (see col. 22, line 64 - col. 23, line 8).

A person of ordinary skill in the art would have been motivated to modify the teachings of Wilson, Gase, and Desrochers with the teachings of Morris for using a wireless device. The motivation for doing so would have been to take advantage of the mobility associated with a wireless device.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brendan Higa whose telephone number is (571)272-5823. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on (571)272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRENDAN HIGA/
Examiner, Art Unit 2453

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